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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,689	03/21/2002	Yoshitaka Kawanabe	040373-0317	4661

22428 7590 06/07/2006

FOLEY AND LARDNER LLP  
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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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ZHENG, EVA Y

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/088,689

Applicant(s)

KAWANABE, YOSHITAKA

Examiner

Eva Yi Zheng

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4, 5, 8 and 9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 5, 8, 9 is/are allowed.  
6) ☒ Claim(s) 4 is/are rejected.  
7) ☒ Claim(s) 9 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's Amendment, filed 3/20/06, with respect to claim(s) 4, 5, 8 and 9 have been fully considered. However, upon further consideration, a new ground(s) of rejection is made.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities: on line 23, please change: "a plurality of said signal" to -- the plurality of said signal --.

3. Claim 9 is objected to because of the following informalities: on line 24-26, for language clarification and to avoid confusion, please change the recitation to -- "a selector/converter that selects from the shift data and signal-converts the selected shift data, from which a desired frequency is obtained from the plurality of said signal sequences; and" --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claim 4, lines 7-11, recitation: (1) "sending said frequency data as a common signal source to each of said plurality of receivers" is confusing and contradicting with (2) "providing a plurality of said signal sequences, each of said signal sequences having different frequency data". Since the frequency data act as a common signal source and supply frequency to a plurality of receivers, the receivers should generate or produce same frequencies to match phase and amplitude (according to specification on page 7, L13-19; Fig. 2). This doesn't introduce different frequencies at receivers. However, the working example of Fig. 4 realizes frequency conversion at intermediate frequencies at different receivers, where quadrature modulation of signals output local oscillation signals of differing frequencies (page 10, L15-page 11, L11). Therefore, it is unclear and confusing of which embodiment of claim 4 is refers to. Is it Fig. 2 or Fig. 4? If it's Fig. 4, there's a lack of steps or features in the claim.

#### ***Allowable Subject Matter***

6. Claim 9 would be allowable if rewritten to overcome the objections, set forth in this Office action.

7. Claims 5 and 8 are allowed.

8. The following is an examiner's statement of reasons for allowance:

None of the prior art teaches or suggests an adaptive array antenna system as the current application. In specific, the system comprising a frequency data generator sending frequency data as a common signal source to a plurality of receivers; providing a plurality of signal sequences supplying shift data; converting digital signal to analog

signal based on a clock signal that is common to all the receivers in each receiver; generating local oscillation signals in each receivers to match all the phase and amplitude; shift data that have undergone selection and conversion; and frequency data are subjected to quadrature modulation to generate respective of the local oscillation signals having a prescribed frequency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is 571-272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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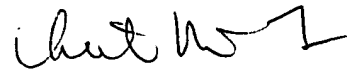
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you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Zheng  
Examiner  
Art Unit 2611

June 2, 2006



CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER